

Date: Sun, 27 Mar 94 04:30:40 PST
From: Ham-Space Mailing List and Newsgroup <ham-space@ucsd.edu>
Errors-To: Ham-Space-Errors@UCSD.Edu
Reply-To: Ham-Space@UCSD.Edu
Precedence: Bulk
Subject: Ham-Space Digest V94 #72
To: Ham-Space

Ham-Space Digest Sun, 27 Mar 94 Volume 94 : Issue 72

Today's Topics:

 * SpaceNews 28-Mar-94 *
 Epoch Day Calculation
 ORBS\$084.2L.AMSAT
 ORBS\$084.MICRO.AMSAT
 ORBS\$084.MISC.AMSAT
 ORBS\$084.OSCAR.AMSAT
 ORBS\$084.WEATH.AMSAT

Send Replies or notes for publication to: <Ham-Space@UCSD.Edu>
Send subscription requests to: <Ham-Space-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Space Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-space".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Fri, 25 Mar 1994 10:05:13 MST
From: agate!howland.reston.ans.net!math.ohio-state.edu!cyber2.cyberstore.ca!
nntp.cs.ubc.ca!utcsri!newsflash.concordia.ca!canopus.cc.umanitoba.ca!
tribune.usask.ca!kakwa.ucs.ualberta.@ihnp4.ucsd.edu
Subject: * SpaceNews 28-Mar-94 *
To: ham-space@ucsd.edu

SB NEWS @ AMSAT \$SPC0328
* SpaceNews 28-Mar-94 *

BID: \$SPC0328

=====
SpaceNews

=====

MONDAY MARCH 28, 1994

SpaceNews originates at KD2BD in Wall Township, New Jersey, USA. It is published every week and is made available for unlimited distribution.

* ITAMSAT PROBLEM *

=====

Earlier this month, the PSK modulation on the primary ITAMSAT transmitter became more and more difficult to decode. A residual carrier and lower output power seem to indicate a failure in the PSK balanced modulator, being worse at the current low power setting. Increasing the power level makes the demodulation better but is not acceptable due to power budget constraints. Ground controllers decided to switch to the secondary PSK transmitter on 435.822 MHz. The first two passes over Italy confirmed the correct operation of the spacecraft and WOD are being taken to analyze the performance of the satellite in this new configuration. The BBS is working as usual and status bulletins are uploaded to the satellite.

73 de ITAMSAT (IO-26) Command Team

[Info via Alberto E. Zagni, I2KBD]

* CLEMENTINE IMAGES AVAILABLE *

=====

Recent images of the Moon that were downlinked by the Clementine spacecraft are available by ftp or email across the Internet. For those with ftp access, simply ftp to clementine.s1.gov [128.15.32.9] and look in the directories under pub/clementine/images. For those with email only, send a message to ftpmail@clementine.s1.gov with a blank subject line and text of "help" only. The email server can provide directory listings and uuencoded binary files such as GIF images.

[Info via Walt, KE3HP]

* OSCAR-13 MODE-S EXTRA BEACON *

=====

In response to requests, the Mode-S session now includes 2 MAs beacon at the start. Mode-B is unaffected. The revised schedule is:

M QST *** AO-13 TRANSPONDER SCHEDULE *** 1994 Mar 19-Apr 04

Mode-B : MA 0 to MA 90 |

Mode-BS : MA 90 to MA 120 |
Mode-S : MA 120 to MA 122 |<- S beacon only
Mode-S : MA 122 to MA 145 |<- S transponder; B trsp. is OFF
Mode-S : MA 145 to MA 150 |<- S beacon only
Mode-BS : MA 150 to MA 180 | Alon/Alat 180/0
Mode-B : MA 180 to MA 256 |
Omnis : MA 230 to MA 30 | Move to attitude 235/0, Apr 04

[Info via James Miller G3RUH @ GB7DDX.#22.GBR.EU]

* F0-20 SCHEDULE *

=====

The F0-20 command station announced that F0-20 will be placed in Mode JA (Analog transponder mode) during Field Day 1994 (25-Jun-94 18:00 UTC through 26-Jun-94 18:00 UTC).

The current operating schedule is as follows:

Analog mode:

23-Mar-94 07:52 -to- 30-Mar-94 08:15 UTC

Digital mode: Unless otherwise noted above.

[Info via Kazu Sakamoto, JJ1WTK]

* THANKS! *

=====

Thanks to BY1QH and K7YHA for the high praise SpaceNews received in articles appearing in the April 1994 issues of 73 and Worldradio magazines! Also thanks to WA1QYM and DL3HRT for their recent messages of appreciation.

* MESSAGES de KD2BD *

=====

G8MWF: Please re-send your WXSAT article. I lost the disk I had it saved to. :-(

* FEEDBACK/INPUT WELCOMED *

=====

Mail to SpaceNews should be directed to the editor (John, KD2BD) via any of the following paths:

FAX : 1-908-747-7107

PACKET : KD2BD @ N2KZH.NJ.USA.NA

INTERNET : kd2bd@ka2qhd.ocpt.ccur.com -or- kd2bd@amsat.org

MAIL : John A. Magliacane, KD2BD
Department of Engineering and Technology
Advanced Technology Center
Brookdale Community College
Lincroft, New Jersey 07738
U.S.A.

<<= SpaceNews: The first amateur newsletter read in space! -=>>

/EX

--
John A. Magliacane, KD2BD * /\ /\ * Voice : 1-908-224-2948
Advanced Technology Center |/\ /\ /\ | Packet : KD2BD @ N2KZH.NJ.USA.NA
Brookdale Community College |/\ /\ /\ | Internet: kd2bd@ka2qhd.ocpt.ccur.com
Lincroft, NJ 07738 * /\ /\ * Morse : -. - .. --- -... -..

Date: 26 Mar 94 23:19:02 GMT
From: news-mail-gateway@ucsd.edu
Subject: Epoch Day Calculation
To: ham-space@ucsd.edu

I'm new to satellite tracking, and my tracking program requires an entry for "epoch day." I have only been able to find data for "epoch time," and from the examples included with the program this does not appear to be what the program (PCT3.EXE) requires. How do I calculate Epoch Day or where can I find the information? Any help would be greatly appreciated!

73,
Joe
WI2E

Date: Fri, 25 Mar 1994 06:59:00 MST
From: usc!math.ohio-state.edu!cyber2.cyberstore.ca!nntp.cs.ubc.ca!utcsri!newsflash.concordia.ca!canopus.cc.umanitoba.ca!tribune.usask.ca!kakwa.ucs.ualberta.ca!quartz.ucs.ualberta.@@ihnp4.ucsd.edu
Subject: ORBS\$084.2L.AMSAT
To: ham-space@ucsd.edu

SB KEPS @ AMSAT \$ORBS-084.N
2Line Orbital Elements 084.AMSAT

HR AMSAT ORBITAL ELEMENTS FOR AMATEUR SATELLITES IN NASA FORMAT
FROM WA5QGD FORT WORTH,TX March 25, 1994
BID: \$ORBS-084.N

DECODE 2-LINE ELSETS WITH THE FOLLOWING KEY:

1 AAAAAU 00 0 0 BBBB.BBBBBBBB .CCCCCCC 00000-0 00000-0 0 DDDZ
2 AAAAA EEE.EEEE FFF.FFFF GGGGGGG HHH.HHHH III.IIII JJ.JJJJJJJJ KKKKKKZ
KEY: A-CATALOGNUM B-EPOCHTIME C-DECAY D-ELSETNUM E-INCLINATION F-RAAN
G-ECCENTRICITY H-ARGPERIGEE I-MNANOM J-MNMOTION K-ORBITNUM Z-CHECKSUM

TO ALL RADIO AMATEURS BT

AO-10

1 14129U 83058B 94078.88849305 -.00000143 00000-0 10000-3 0 2710
2 14129 27.1881 336.3846 6021341 163.5017 230.9609 2.05878514 80949

UO-11

1 14781U 84021B 94080.50956311 .00000321 00000-0 62308-4 0 6757
2 14781 97.7914 99.3260 0011137 186.0140 174.0935 14.69174575537432

RS-10/11

1 18129U 87054A 94079.84948217 .00000032 00000-0 18660-4 0 8839
2 18129 82.9229 34.1304 0010237 273.8387 86.1598 13.72333391337792

AO-13

1 19216U 88051B 94079.56167208 -.00000427 00000-0 10000-4 0 8960
2 19216 57.8735 262.2374 7209738 337.3974 2.4979 2.09727288 44154

FO-20

1 20480U 90013C 94080.89109631 -.00000016 00000-0 34911-4 0 6701
2 20480 99.0243 249.2547 0540894 177.1640 183.2749 12.83224747192930

AO-21

1 21087U 91006A 94080.39087956 .00000093 00000-0 82657-4 0 4463
2 21087 82.9379 207.6619 0035401 331.2194 28.7007 13.74536127157528

RS-12/13

1 21089U 91007A 94079.90823919 .00000032 00000-0 18216-4 0 6733
2 21089 82.9180 76.9195 0029938 357.6064 2.4956 13.74037183156521

ARSENE

1 22654U 93031B 94064.50000000 -.00000119 00000-0 00000 0 0 2469
2 22654 1.6510 105.2680 2927552 173.8780 198.1380 1.42201225 2991

UO-14

1 20437U 90005B 94081.17271111 .00000085 00000-0 50080-4 0 9757
2 20437 98.5928 167.1239 0011938 85.5805 274.6738 14.29832075217155

AO-16

1 20439U 90005D 94080.46187457 .00000059 00000-0 39719-4 0 7754
2 20439 98.5999 167.5628 0012341 89.1267 271.1308 14.29886627217069

DO-17

1 20440U 90005E 94080.42475274 .00000076 00000-0 46272-4 0 7749
2 20440 98.5973 167.8190 0012406 88.5722 271.6879 14.30025717217077

WO-18

1 20441U 90005F 94081.23816758 .00000086 00000-0 50302-4 0 7768

2 20441 98.6015 168.6325 0013015 86.3234 273.9433 14.30001255217191
 L0-19
 1 20442U 90005G 94080.24263321 .00000078 00000-0 46967-4 0 7742
 2 20442 98.6015 167.8834 0013223 87.9281 272.3415 14.30095566217065
 U0-22
 1 21575U 91050B 94079.70081566 .00000111 00000-0 52198-4 0 4769
 2 21575 98.4399 155.9592 0007223 188.8493 171.2552 14.36900838140375
 K0-23
 1 22077U 92052B 94080.53661719 -.00000037 00000-0 10000-3 0 3714
 2 22077 66.0814 103.5014 0011679 308.7258 51.2714 12.86285587 75516
 A0-27
 1 22825U 93061C 94081.11877430 .00000025 00000-0 28178-4 0 2722
 2 22825 98.6600 157.7790 0009554 101.5696 258.6548 14.27613987 25268
 I0-26
 1 22826U 93061D 94081.10608673 .00000042 00000-0 34690-4 0 2728
 2 22826 98.6605 157.7921 0009917 100.6730 259.5579 14.27717009 25266
 K0-25
 1 22830U 93061H 94080.22548462 .00000089 00000-0 53029-4 0 2755
 2 22830 98.5601 155.1027 0012635 74.3234 285.9328 14.28041738 25144
 NOAA-9
 1 15427U 84123A 94081.96146229 .00000121 00000-0 88127-4 0 7596
 2 15427 99.0648 131.4010 0015937 101.6666 258.6297 14.13600524478169
 NOAA-10
 1 16969U 86073A 94082.90887763 .00000064 00000-0 45657-4 0 6589
 2 16969 98.5123 94.5094 0012333 216.3165 143.7179 14.24874536390466
 MET-2/17
 1 18820U 88005A 94080.22884509 .00000094 00000-0 70460-4 0 2738
 2 18820 82.5454 338.5623 0018465 67.8592 292.4524 13.84711844310182
 MET-3/2
 1 19336U 88064A 94081.32685617 .00000051 00000-0 10000-3 0 2700
 2 19336 82.5427 25.1440 0017958 116.8969 243.3993 13.16965967271824
 NOAA-11
 1 19531U 88089A 94083.23885812 .00000062 00000-0 58133-4 0 5722
 2 19531 99.1670 70.0925 0012545 15.7107 344.4450 14.12969487283226
 MET-2/18
 1 19851U 89018A 94080.40680956 .00000034 00000-0 17134-4 0 2720
 2 19851 82.5191 213.8899 0015509 110.5826 249.6996 13.84358994255545
 MET-3/3
 1 20305U 89086A 94082.55451529 .00000044 00000-0 10000-3 0 61
 2 20305 82.5548 329.1930 0006520 134.5372 225.6269 13.04425118211734
 MET-2/19
 1 20670U 90057A 94080.04388230 .00000024 00000-0 79036-5 0 7742
 2 20670 82.5426 278.4813 0017557 35.8879 324.3453 13.84190186188420
 FY-1/2
 1 20788U 90081A 94082.50755940 -.00000152 00000-0 -72818-4 0 9249
 2 20788 98.8351 105.3769 0013462 244.9487 115.0282 14.01311177181708
 MET-2/20
 1 20826U 90086A 94081.16757303 .00000046 00000-0 28563-4 0 7834

2 20826 82.5237 215.2023 0012267 296.1467 63.8429 13.83574940175723
 MET-3/4
 1 21232U 91030A 94080.99666993 .000000051 00000-0 10000-3 0 6819
 2 21232 82.5384 231.2188 0014561 45.1711 315.0592 13.16460562139881
 NOAA-12
 1 21263U 91032A 94074.00396538 .000000180 00000-0 10013-3 0 9646
 2 21263 98.6278 103.8182 0013418 145.8585 214.3456 14.22379795147143
 MET-3/5
 1 21655U 91056A 94080.22430161 .000000051 00000-0 10000-3 0 6885
 2 21655 82.5573 178.8593 0014769 59.6601 300.6003 13.16828445124883
 MET-2/21
 1 22782U 93055A 94080.53840969 .000000026 00000-0 10250-4 0 2834
 2 22782 82.5471 275.8954 0023357 108.2430 252.1263 13.83002864 27979
 POSAT
 1 22829U 93061G 94081.13993678 .000000098 00000-0 57325-4 0 2659
 2 22829 98.6563 157.8404 0011057 89.9512 270.2938 14.28013136 25275
 MIR
 1 16609U 86017A 94083.32520032 .00009346 00000-0 12671-3 0 5375
 2 16609 51.6456 251.6581 0015343 67.8161 292.4504 15.58331750462819
 HUBBLE
 1 20580U 90037B 94080.23738730 .000000835 00000-0 68306-4 0 4592
 2 20580 28.4697 80.9010 0005913 249.5279 110.4672 14.90534070 16255
 GRO
 1 21225U 91027B 94079.53676843 .00004336 00000-0 97694-4 0 752
 2 21225 28.4636 127.3366 0003390 287.6252 72.3973 15.40420925 43255
 UARS
 1 21701U 91063B 94082.87298435 -.00003323 00000-0 -26935-3 0 4962
 2 21701 56.9828 140.9350 0004265 92.4899 267.6620 14.96488088138165
 /EX

Date: Fri, 25 Mar 1994 06:51:00 MST
 From: usc!math.ohio-state.edu!cyber2.cyberstore.ca!nntp.cs.ubc.ca!utcsri!
 newsflash.concordia.ca!canopus.cc.umanitoba.ca!tribune.usask.ca!
 kakwa.ucs.ualberta.ca!quartz.ucs.ualberta.@@ihnp4.ucsd.edu
 Subject: ORBS\$084.MICRO.AMSAT
 To: ham-space@ucsd.edu

SB KEPS @ AMSAT \$ORBS-084.D
 Orbital Elements 084.MICROS

HR AMSAT ORBITAL ELEMENTS FOR THE MICROSATS
 FROM WA5QGD FORT WORTH,TX March 25, 1994
 BID: \$ORBS-084.D
 TO ALL RADIO AMATEURS BT

Satellite: UO-14

Catalog number: 20437
Epoch time: 94081.17271111
Element set: 975
Inclination: 98.5928 deg
RA of node: 167.1239 deg
Eccentricity: 0.0011938
Arg of perigee: 85.5805 deg
Mean anomaly: 274.6738 deg
Mean motion: 14.29832075 rev/day
Decay rate: 8.5e-07 rev/day²
Epoch rev: 21715
Checksum: 326

Satellite: A0-16
Catalog number: 20439
Epoch time: 94080.46187457
Element set: 775
Inclination: 98.5999 deg
RA of node: 167.5628 deg
Eccentricity: 0.0012341
Arg of perigee: 89.1267 deg
Mean anomaly: 271.1308 deg
Mean motion: 14.29886627 rev/day
Decay rate: 5.9e-07 rev/day²
Epoch rev: 21706
Checksum: 351

Satellite: D0-17
Catalog number: 20440
Epoch time: 94080.42475274
Element set: 774
Inclination: 98.5973 deg
RA of node: 167.8190 deg
Eccentricity: 0.0012406
Arg of perigee: 88.5722 deg
Mean anomaly: 271.6879 deg
Mean motion: 14.30025717 rev/day
Decay rate: 7.6e-07 rev/day²
Epoch rev: 21707
Checksum: 321

Satellite: W0-18
Catalog number: 20441
Epoch time: 94081.23816758
Element set: 776
Inclination: 98.6015 deg
RA of node: 168.6325 deg
Eccentricity: 0.0013015

Arg of perigee: 86.3234 deg
Mean anomaly: 273.9433 deg
Mean motion: 14.30001255 rev/day
Decay rate: 8.6e-07 rev/day²
Epoch rev: 21719
Checksum: 295

Satellite: L0-19
Catalog number: 20442
Epoch time: 94080.24263321
Element set: 774
Inclination: 98.6015 deg
RA of node: 167.8834 deg
Eccentricity: 0.0013223
Arg of perigee: 87.9281 deg
Mean anomaly: 272.3415 deg
Mean motion: 14.30095566 rev/day
Decay rate: 7.8e-07 rev/day²
Epoch rev: 21706
Checksum: 301

Satellite: U0-22
Catalog number: 21575
Epoch time: 94079.70081566
Element set: 476
Inclination: 98.4399 deg
RA of node: 155.9592 deg
Eccentricity: 0.0007223
Arg of perigee: 188.8493 deg
Mean anomaly: 171.2552 deg
Mean motion: 14.36900838 rev/day
Decay rate: 1.11e-06 rev/day²
Epoch rev: 14037
Checksum: 329

Satellite: K0-23
Catalog number: 22077
Epoch time: 94080.53661719
Element set: 371
Inclination: 66.0814 deg
RA of node: 103.5014 deg
Eccentricity: 0.0011679
Arg of perigee: 308.7258 deg
Mean anomaly: 51.2714 deg
Mean motion: 12.86285587 rev/day
Decay rate: -3.7e-07 rev/day²
Epoch rev: 7551
Checksum: 301

Satellite: A0-27
Catalog number: 22825
Epoch time: 94081.11877430
Element set: 272
Inclination: 98.6600 deg
RA of node: 157.7790 deg
Eccentricity: 0.0009554
Arg of perigee: 101.5696 deg
Mean anomaly: 258.6548 deg
Mean motion: 14.27613987 rev/day
Decay rate: 2.5e-07 rev/day^2
Epoch rev: 2526
Checksum: 327

Satellite: I0-26
Catalog number: 22826
Epoch time: 94081.10608673
Element set: 272
Inclination: 98.6605 deg
RA of node: 157.7921 deg
Eccentricity: 0.0009917
Arg of perigee: 100.6730 deg
Mean anomaly: 259.5579 deg
Mean motion: 14.27717009 rev/day
Decay rate: 4.2e-07 rev/day^2
Epoch rev: 2526
Checksum: 313

Satellite: K0-25
Catalog number: 22830
Epoch time: 94080.22548462
Element set: 275
Inclination: 98.5601 deg
RA of node: 155.1027 deg
Eccentricity: 0.0012635
Arg of perigee: 74.3234 deg
Mean anomaly: 285.9328 deg
Mean motion: 14.28041738 rev/day
Decay rate: 8.9e-07 rev/day^2
Epoch rev: 2514
Checksum: 295

/EX

Date: Fri, 25 Mar 1994 06:57:00 MST

From: agate!howland.reston.ans.net!math.ohio-state.edu!cyber2.cyberstore.ca!
nntp.cs.ubc.ca!utcsri!newsflash.concordia.ca!canopus.cc.umanitoba.ca!
tribune.usask.ca!kakwa.ucs.ualberta.@ihnp4.ucsd.edu
Subject: ORBS\$084.MISC.AMSAT
To: ham-space@ucsd.edu

SB KEPS @ AMSAT \$ORBS-084.M
Orbital Elements 084.MISC

HR AMSAT ORBITAL ELEMENTS FOR MANNED AND MISCELLANEOUS SATELLITES
FROM WA5QGD FORT WORTH,TX March 25, 1994
BID: \$ORBS-084.M
TO ALL RADIO AMATEURS BT

Satellite: POSAT
Catalog number: 22829
Epoch time: 94081.13993678
Element set: 265
Inclination: 98.6563 deg
RA of node: 157.8404 deg
Eccentricity: 0.0011057
Arg of perigee: 89.9512 deg
Mean anomaly: 270.2938 deg
Mean motion: 14.28013136 rev/day
Decay rate: 9.8e-07 rev/day^2
Epoch rev: 2527
Checksum: 321

Satellite: MIR
Catalog number: 16609
Epoch time: 94083.32520032
Element set: 537
Inclination: 51.6456 deg
RA of node: 251.6581 deg
Eccentricity: 0.0015343
Arg of perigee: 67.8161 deg
Mean anomaly: 292.4504 deg
Mean motion: 15.58331750 rev/day
Decay rate: 9.346e-05 rev/day^2
Epoch rev: 46281
Checksum: 293

Satellite: HUBBLE
Catalog number: 20580
Epoch time: 94080.23738730
Element set: 459
Inclination: 28.4697 deg
RA of node: 80.9010 deg

Eccentricity: 0.0005913
Arg of perigee: 249.5279 deg
Mean anomaly: 110.4672 deg
Mean motion: 14.90534070 rev/day
Decay rate: 8.35e-06 rev/day^2
Epoch rev: 1625
Checksum: 290

Satellite: GRO
Catalog number: 21225
Epoch time: 94079.53676843
Element set: 75
Inclination: 28.4636 deg
RA of node: 127.3366 deg
Eccentricity: 0.0003390
Arg of perigee: 287.6252 deg
Mean anomaly: 72.3973 deg
Mean motion: 15.40420925 rev/day
Decay rate: 4.336e-05 rev/day^2
Epoch rev: 4325
Checksum: 300

Satellite: UARS
Catalog number: 21701
Epoch time: 94082.87298435
Element set: 496
Inclination: 56.9828 deg
RA of node: 140.9350 deg
Eccentricity: 0.0004265
Arg of perigee: 92.4899 deg
Mean anomaly: 267.6620 deg
Mean motion: 14.96488088 rev/day
Decay rate: -3.323e-05 rev/day^2
Epoch rev: 13816
Checksum: 341

/EX

Date: Fri, 25 Mar 1994 06:48:00 MST
From: usc!math.ohio-state.edu!cyber2.cyberstore.ca!nntp.cs.ubc.ca!utcsri!
newsflash.concordia.ca!canopus.cc.umanitoba.ca!tribune.usask.ca!
kakwa.ucs.ualberta.ca!quartz.ucs.ualberta.@@ihnp4.ucsd.edu
Subject: ORBS\$084.OSCAR.AMSAT
To: ham-space@ucsd.edu

SB KEPS @ AMSAT \$ORBS-084.0

Orbital Elements 084.OSCAR

HR AMSAT ORBITAL ELEMENTS FOR OSCAR SATELLITES
FROM WA5QGD FORT WORTH, TX March 25, 1994
BID: \$ORBS-084.0
TO ALL RADIO AMATEURS BT

Satellite: A0-10
Catalog number: 14129
Epoch time: 94078.88849305
Element set: 271
Inclination: 27.1881 deg
RA of node: 336.3846 deg
Eccentricity: 0.6021341
Arg of perigee: 163.5017 deg
Mean anomaly: 230.9609 deg
Mean motion: 2.05878514 rev/day
Decay rate: -1.43e-06 rev/day²
Epoch rev: 8094
Checksum: 310

Satellite: U0-11
Catalog number: 14781
Epoch time: 94080.50956311
Element set: 675
Inclination: 97.7914 deg
RA of node: 99.3260 deg
Eccentricity: 0.0011137
Arg of perigee: 186.0140 deg
Mean anomaly: 174.0935 deg
Mean motion: 14.69174575 rev/day
Decay rate: 3.21e-06 rev/day²
Epoch rev: 53743
Checksum: 307

Satellite: RS-10/11
Catalog number: 18129
Epoch time: 94079.84948217
Element set: 883
Inclination: 82.9229 deg
RA of node: 34.1304 deg
Eccentricity: 0.0010237
Arg of perigee: 273.8387 deg
Mean anomaly: 86.1598 deg
Mean motion: 13.72333391 rev/day
Decay rate: 3.2e-07 rev/day²
Epoch rev: 33779
Checksum: 330

Satellite: A0-13
Catalog number: 19216
Epoch time: 94079.56167208
Element set: 896
Inclination: 57.8735 deg
RA of node: 262.2374 deg
Eccentricity: 0.7209738
Arg of perigee: 337.3974 deg
Mean anomaly: 2.4979 deg
Mean motion: 2.09727288 rev/day
Decay rate: -4.27e-06 rev/day^2
Epoch rev: 4415
Checksum: 357

Satellite: F0-20
Catalog number: 20480
Epoch time: 94080.89109631
Element set: 670
Inclination: 99.0243 deg
RA of node: 249.2547 deg
Eccentricity: 0.0540894
Arg of perigee: 177.1640 deg
Mean anomaly: 183.2749 deg
Mean motion: 12.83224747 rev/day
Decay rate: -1.6e-07 rev/day^2
Epoch rev: 19293
Checksum: 320

Satellite: A0-21
Catalog number: 21087
Epoch time: 94080.39087956
Element set: 446
Inclination: 82.9379 deg
RA of node: 207.6619 deg
Eccentricity: 0.0035401
Arg of perigee: 331.2194 deg
Mean anomaly: 28.7007 deg
Mean motion: 13.74536127 rev/day
Decay rate: 9.3e-07 rev/day^2
Epoch rev: 15752
Checksum: 314

Satellite: RS-12/13
Catalog number: 21089
Epoch time: 94079.90823919
Element set: 673
Inclination: 82.9180 deg

RA of node: 76.9195 deg
Eccentricity: 0.0029938
Arg of perigee: 357.6064 deg
Mean anomaly: 2.4956 deg
Mean motion: 13.74037183 rev/day
Decay rate: 3.2e-07 rev/day^2
Epoch rev: 15652
Checksum: 338

Satellite: ARSENE
Catalog number: 22654
Epoch time: 94064.50000000
Element set: 246
Inclination: 1.6510 deg
RA of node: 105.2680 deg
Eccentricity: 0.2927552
Arg of perigee: 173.8780 deg
Mean anomaly: 198.1380 deg
Mean motion: 1.42201225 rev/day
Decay rate: -1.19e-06 rev/day^2
Epoch rev: 299
Checksum: 250

/EX

Date: Fri, 25 Mar 1994 06:54:00 MST
From: usc!math.ohio-state.edu!cyber2.cyberstore.ca!nntp.cs.ubc.ca!utcsri!
newsflash.concordia.ca!canopus.cc.umanitoba.ca!tribune.usask.ca!
kakwa.ucs.ualberta.ca!quartz.ucs.ualberta.@@ihnp4.ucsd.edu
Subject: ORBS\$084.WEATH.AMSAT
To: ham-space@ucsd.edu

SB KEPS @ AMSAT \$ORBS-084.W
Orbital Elements 084.WEATHER

HR AMSAT ORBITAL ELEMENTS FOR WEATHER SATELLITES
FROM WA5QGD FORT WORTH,TX March 25, 1994
BID: \$ORBS-084.W
TO ALL RADIO AMATEURS BT

Satellite: NOAA-9
Catalog number: 15427
Epoch time: 94081.96146229
Element set: 759
Inclination: 99.0648 deg
RA of node: 131.4010 deg

Eccentricity: 0.0015937
Arg of perigee: 101.6666 deg
Mean anomaly: 258.6297 deg
Mean motion: 14.13600524 rev/day
Decay rate: 1.21e-06 rev/day^2
Epoch rev: 47816
Checksum: 312

Satellite: NOAA-10
Catalog number: 16969
Epoch time: 94082.90887763
Element set: 658
Inclination: 98.5123 deg
RA of node: 94.5094 deg
Eccentricity: 0.0012333
Arg of perigee: 216.3165 deg
Mean anomaly: 143.7179 deg
Mean motion: 14.24874536 rev/day
Decay rate: 6.4e-07 rev/day^2
Epoch rev: 39046
Checksum: 336

Satellite: MET-2/17
Catalog number: 18820
Epoch time: 94080.22884509
Element set: 273
Inclination: 82.5454 deg
RA of node: 338.5623 deg
Eccentricity: 0.0018465
Arg of perigee: 67.8592 deg
Mean anomaly: 292.4524 deg
Mean motion: 13.84711844 rev/day
Decay rate: 9.4e-07 rev/day^2
Epoch rev: 31018
Checksum: 325

Satellite: MET-3/2
Catalog number: 19336
Epoch time: 94081.32685617
Element set: 270
Inclination: 82.5427 deg
RA of node: 25.1440 deg
Eccentricity: 0.0017958
Arg of perigee: 116.8969 deg
Mean anomaly: 243.3993 deg
Mean motion: 13.16965967 rev/day
Decay rate: 5.1e-07 rev/day^2
Epoch rev: 27182

Checksum: 333

Satellite: NOAA-11
Catalog number: 19531
Epoch time: 94083.23885812
Element set: 572
Inclination: 99.1670 deg
RA of node: 70.0925 deg
Eccentricity: 0.0012545
Arg of perigee: 15.7107 deg
Mean anomaly: 344.4450 deg
Mean motion: 14.12969487 rev/day
Decay rate: 6.2e-07 rev/day²
Epoch rev: 28322
Checksum: 300

Satellite: MET-2/18
Catalog number: 19851
Epoch time: 94080.40680956
Element set: 272
Inclination: 82.5191 deg
RA of node: 213.8899 deg
Eccentricity: 0.0015509
Arg of perigee: 110.5826 deg
Mean anomaly: 249.6996 deg
Mean motion: 13.84358994 rev/day
Decay rate: 3.4e-07 rev/day²
Epoch rev: 25554
Checksum: 352

Satellite: MET-3/3
Catalog number: 20305
Epoch time: 94082.55451529
Element set: 6
Inclination: 82.5548 deg
RA of node: 329.1930 deg
Eccentricity: 0.0006520
Arg of perigee: 134.5372 deg
Mean anomaly: 225.6269 deg
Mean motion: 13.04425118 rev/day
Decay rate: 4.4e-07 rev/day²
Epoch rev: 21173
Checksum: 272

Satellite: MET-2/19
Catalog number: 20670
Epoch time: 94080.04388230
Element set: 774

Inclination: 82.5426 deg
RA of node: 278.4813 deg
Eccentricity: 0.0017557
Arg of perigee: 35.8879 deg
Mean anomaly: 324.3453 deg
Mean motion: 13.84190186 rev/day
Decay rate: 2.4e-07 rev/day^2
Epoch rev: 18842
Checksum: 324

Satellite: FY-1/2
Catalog number: 20788
Epoch time: 94082.50755940
Element set: 924
Inclination: 98.8351 deg
RA of node: 105.3769 deg
Eccentricity: 0.0013462
Arg of perigee: 244.9487 deg
Mean anomaly: 115.0282 deg
Mean motion: 14.01311177 rev/day
Decay rate: -1.52e-06 rev/day^2
Epoch rev: 18170
Checksum: 301

Satellite: MET-2/20
Catalog number: 20826
Epoch time: 94081.16757303
Element set: 783
Inclination: 82.5237 deg
RA of node: 215.2023 deg
Eccentricity: 0.0012267
Arg of perigee: 296.1467 deg
Mean anomaly: 63.8429 deg
Mean motion: 13.83574940 rev/day
Decay rate: 4.6e-07 rev/day^2
Epoch rev: 17572
Checksum: 308

Satellite: MET-3/4
Catalog number: 21232
Epoch time: 94080.99666993
Element set: 681
Inclination: 82.5384 deg
RA of node: 231.2188 deg
Eccentricity: 0.0014561
Arg of perigee: 45.1711 deg
Mean anomaly: 315.0592 deg
Mean motion: 13.16460562 rev/day

Decay rate: 5.1e-07 rev/day^2
Epoch rev: 13988
Checksum: 306

Satellite: NOAA-12
Catalog number: 21263
Epoch time: 94074.00396538
Element set: 964
Inclination: 98.6278 deg
RA of node: 103.8182 deg
Eccentricity: 0.0013418
Arg of perigee: 145.8585 deg
Mean anomaly: 214.3456 deg
Mean motion: 14.22379795 rev/day
Decay rate: 1.80e-06 rev/day^2
Epoch rev: 14714
Checksum: 320

Satellite: MET-3/5
Catalog number: 21655
Epoch time: 94080.22430161
Element set: 688
Inclination: 82.5573 deg
RA of node: 178.8593 deg
Eccentricity: 0.0014769
Arg of perigee: 59.6601 deg
Mean anomaly: 300.6003 deg
Mean motion: 13.16828445 rev/day
Decay rate: 5.1e-07 rev/day^2
Epoch rev: 12488
Checksum: 308

Satellite: MET-2/21
Catalog number: 22782
Epoch time: 94080.53840969
Element set: 283
Inclination: 82.5471 deg
RA of node: 275.8954 deg
Eccentricity: 0.0023357
Arg of perigee: 108.2430 deg
Mean anomaly: 252.1263 deg
Mean motion: 13.83002864 rev/day
Decay rate: 2.6e-07 rev/day^2
Epoch rev: 2797
Checksum: 309

/EX

End of Ham-Space Digest V94 #72
